

CONSERVATISM IN THE TREATMENT OF INFECTIVE BONE LESIONS OF THE FINGERS*

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IT is not my purpose to discuss all the various factors that may enter into the decision as to just when a finger should or should not be amputated. It is a generally acknowledged fact that in infected cases amputations are frequently performed, rather than the patient should be submitted to a much more prolonged period of treatment for an infective process. It may also be admitted that in industrial work this may be in many cases an economical procedure, both from the standpoint of the employee who often prefers to lose a small portion or even the whole of one of his less important fingers so as to permit his early return to work with full pay; and from the standpoint of the employer, for whom it is much cheaper to pay the small percentage of permanent disability allowed in

account of an infective process involving the bone.

The importance of a conservative attitude in dealing with infections of the fingers, particularly those with bony involvement, cannot be too strongly emphasized. In the experience of the author only too often does one hear the story from the patient "The doctor took an x-ray of my hand and found it was necessary to scrape the bone." It would seem that to many practitioners the presence of a periostitis, osteitis or osteomyelitis is an indication for the use of the curette, with all its disastrous consequences, or even for immediate amputation. It is my belief that of the large numbers of fingers constantly being amputated many might be saved if the significance of the radiological findings were

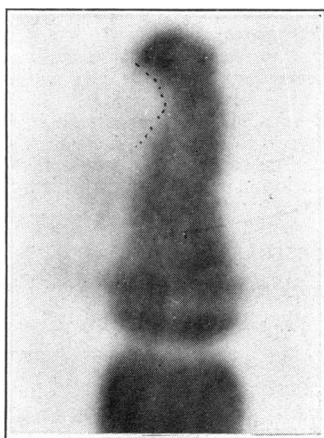


FIG. 1.—Case 1.

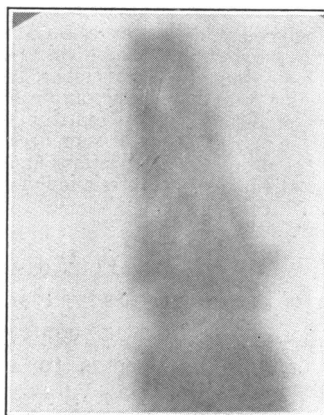


FIG. 2.—Case 1, at the end of one month showing repair to terminal phalanx.

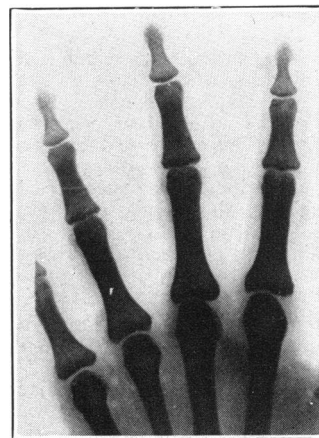


FIG. 3.—Case 1, at the end of one year. Slight over production of bone at site of abscess cavity.

such cases than to pay the injured man's salary, as well as his medical expenses over a considerably longer period. But, even allowing for the full weight of these considerations, we should not lose sight of the fact that only very rarely is it absolutely necessary to sacrifice a finger on

better understood, especially by surgeons engaged in doing industrial work.

The following cases are illustrative of certain important points in this connection:

CASE 1

Fig. 1 is a skiagram of the terminal phalanx of the index finger of a nurse, 72 hours after pricking her finger with a safety pin. Note the small abscess cavity with absorption of bone from the radial side of the

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terminal phalanx just beneath the periosteum. In this case the period between the primary injury and the appearance of actual bone destruction is considerably less than is usually thought necessary for such a process. It is probably accounted for by the early cutting off by edema of the blood supply to the "closed space," as described by Kanavel. This finger was incised about

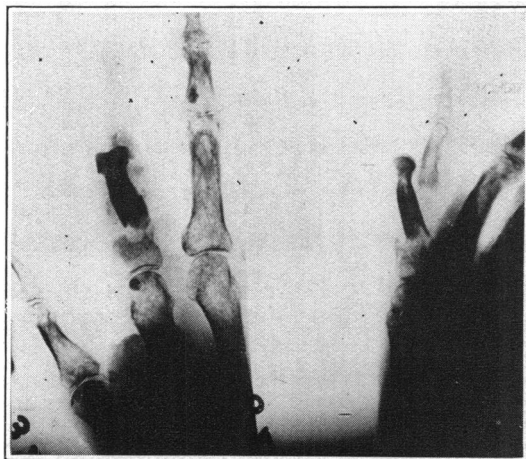


FIG. 4.—Case 2. Note sequestration of proximal phalanx.

two hours later (74 hours after injury) using a "fish-mouth" incision. The operation being performed in a bloodless field, a pocket of pus lying beneath the periosteum was easily demonstrated. The wound was packed with B.I.P.P. and liquid paraffin. The packing was removed on the fifth day, after which the wound was dressed on alternate days with sterile liquid paraffin until the eleventh day, when the edges were strapped together with adhesive. Primary union of the skin occurred and the patient was able to return to duty on the 14th day. All dressings were discarded about the twentieth day.

The points to be noted in this case are: (1) the early absorption of bone in the terminal phalanx in infection following injury; (2) the prompt arrest of the infective process under appropriate treatment; (3) the complete recovery in a comparatively short time.

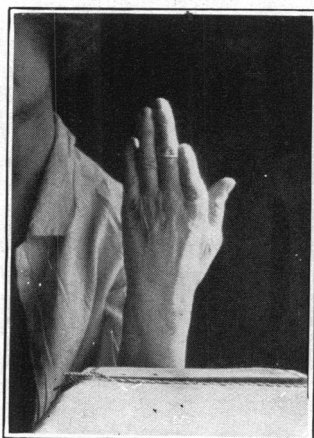


FIG. 5.—Case 2; two years later.

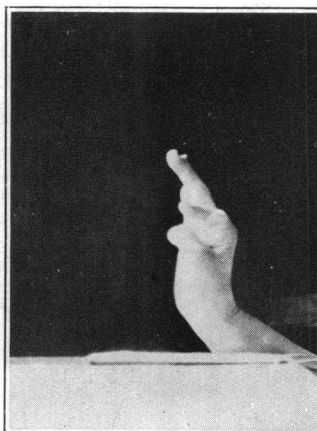


FIG. 6.—Case 2; lateral view to show degree of flexion possible.

CASE 2

In this case there was a very severe infection of the index finger, involving the proximal phalanx, and encroaching upon the proximal interphalangeal joint, with sequestration of the distal three-quarters of the proximal phalanx. (Fig. 4). The finger was widely incised on the lateral aspect, the sequestrum was removed, and the cavity packed until the acute infection had subsided. After the removal of the packing the finger was loosely splinted, the tendons being allowed to contract and the finger to shorten.

The ultimate result, as seen in Figs. 5, 6 and 7 (taken 2 years later), was a shortening of the index finger to a little more than one-half of the normal length, but there was extremely good function, the patient being able to lift a weight of eight pounds with the finger in a position of flexion.

CASE 3

Severe infection of index finger following a wound on the ulnar side of the middle phalanx on September 15, 1928, as shown in Fig. 8 taken on September 22nd, two days after incision of the finger on the lateral aspect; there was swelling of the soft parts only.

On October 15th, when the case first came under the observation of the author an x-ray showed apparent beginning sequestration of the distal portion of the middle phalanx (Fig. 9). From the time of injury until this date the finger had been treated with moist dressings. On October 16th, under general anesthesia, and in a bloodless field, the finger was widely incised on its ulnar side. The bone of the distal half of the middle phalanx and of the proximal portion of the distal phalanx appeared to have completely lost its periosteal covering and a destruction of bone at the line indicated in the x-ray could be clearly made out. The distal interphalangeal joint, however, did not appear to be involved. It was felt that an attempt to save the finger might prove successful, or that, at least, if amputation were necessary this might more safely be performed in a few days, when the tissues had somewhat recovered from the effect of the prolonged moist applications. The wound was treated by packing with B.I.P.P. and subsequent dressings with liquid paraffin. Rapid healing of the soft tissues occurred as seen in Fig. 10, which was taken on November 5th. The distal end of the middle phalanx still looks suspiciously like sequestrum formation.

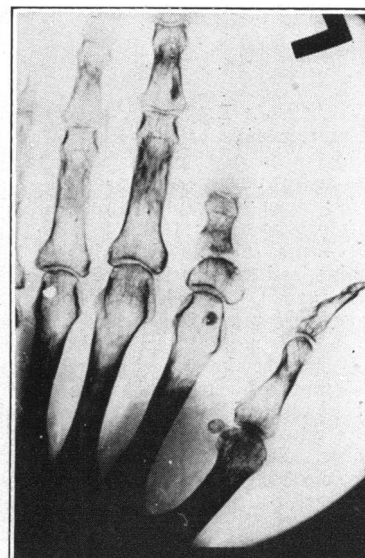


FIG. 7.—Case 2; x-ray two years after lesion.

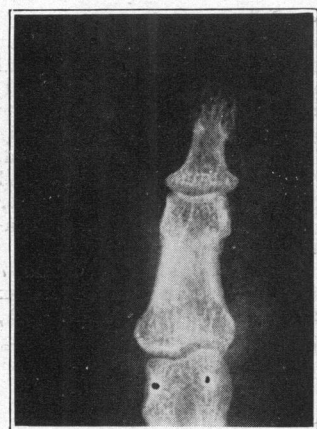


FIG. 8.—Case 3, one week after beginning of infection.

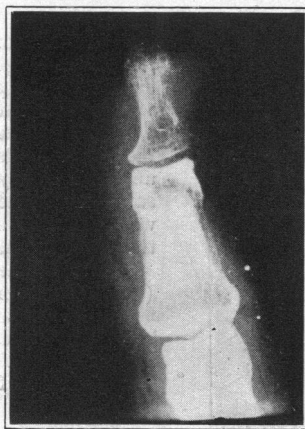


FIG. 9.—Case 3, early sequestration in middle phalanx.

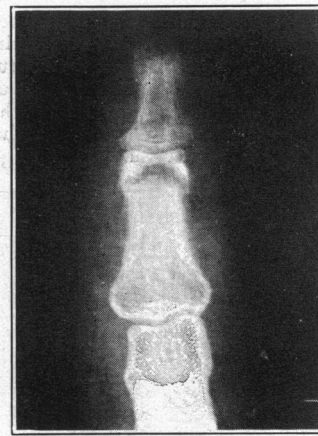


FIG. 10.—Case 3, healing of soft tissues; line of sequestrum still visible.

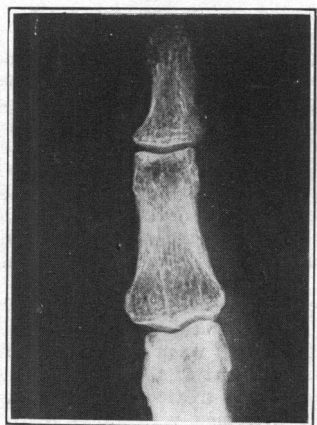


FIG. 11.—Case 3, showing complete healing.

In about six weeks healing was complete, and another x-ray was taken (Fig. 11). No sequestration occurred. Although the skin remained very tender for a number of months, the man eventually had a very useful finger with a range of movement of approximately two-thirds of normal in the distal interphalangeal joint.

CONCLUSIONS

1. Bone changes, due to infection and demonstrable by x-ray, occur earlier in the terminal phalanx of the finger than elsewhere in the body.
2. The presence of a bony lesion, demonstrable by x-ray or by operation, does not necessarily mean that sequestration will occur.
3. If, and when, sequestration does occur, the loss of even a large portion of a phalanx does not necessarily call for sacrifice of the finger.

RAYNAUD'S DISEASE AND ARSENIC RETENTION.—A. F. Kraetzer calls attention to recent work by Throne and Myers on arsenic retention and eczema, and mentions many unsuspected or little known sources of arsenic; among them are woollen and cotton fabrics, silk impregnated with tin, tobacco, and some common medicaments such as rhubarb and soda, sulphur, and calamine and zinc lotions. He records the case of a woman, aged 38, who had worked for fourteen years in a greenhouse where insecticide sprays containing arsenic were in daily use. After attacks each spring of pruritic rashes on the hands with frequent soreness of the throat, chronic constipation, and general poor health, she began to exhibit signs of Raynaud's disease in the fingers and toes, which caused great pain and inconvenience. The attacks were almost invariably brought on by motoring in cold weather. Physical examination of the patient showed signs of arsenic retention, and

thirty-six hours after the intravenous injection of 1 gram of sodium thiosulphate the urine was found by the Marsh test to contain 0.068 mg. of arsenic per 100 grams of dried material. A five weeks' course of bi-weekly injections of 1 gram of sodium thiosulphate was given, after which the dose was continued once a week. At the same time the patient was placed on a low carbohydrate diet, with enemas of sulphonated bitumen, and quarter-grain doses of thyroid extract twice a day. Diminution of the severity of the trouble was soon noticed and was steadily maintained. The toes soon cleared up; the agony during the recovery stage after putting the hands in warm water became less acute and then disappeared. The congestion stage shortened and then vanished, so that at the end of two months she was free from attack, even after driving her car in cold, wintry weather.—*J. Am. M. Ass.* p. 1035, April 5th, 1930.